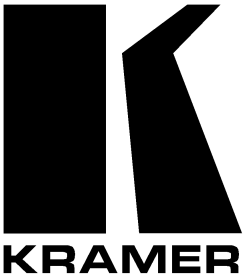
Kramer Electronics, Ltd.



USER MANUAL

Model:

VS-41DVI-R

4x1 DVI Switcher

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1 Introduction

Welcome to Kramer Electronics (since 1981): a world of unique, creative and affordable solutions to the infinite range of problems that confront the video, audio and presentation professional on a daily basis. In recent years, we have redesigned and upgraded most of our line, making the best even better! Our 350-plus different models now appear in 8 Groups[1], which are clearly defined by function.

Congratulations on purchasing your Kramer **VS-41DVI-R** *4x1 DVI Switcher*[2].

The **VS-41DVI-R** is ideal for conference room presentations and advertising applications, as well as for rental and staging. Each package includes the following items:

- **VS-41DVI-R** *4x1 DVI Switcher*
- Power cord
- This user manual[3]

2 Getting Started

We recommend that you:

- Unpack the equipment carefully and save the original box and packaging materials for possible future shipment
- Review the contents of this user manual
- Use Kramer high performance high resolution DVI cables[4]

1 GROUP 1: Distribution Amplifiers; GROUP 2: Video and Audio Switchers, Matrix Switchers and Controllers; GROUP 3: Video, Audio, VGA/XGA Processors; GROUP 4: Interfaces and Sync Processors; GROUP 5: Twisted Pair Interfaces; GROUP 6: Accessories and Rack Adapters; GROUP 7: Scan Converters and Scalers; and GROUP 8: Cables and Connectors

2 VS-41DVI instead of VS-41DVI-R may be printed on some versions of this machine

3 Download up-to-date Kramer user manuals from our Web site at http://www.kramerelectronics.com

4 The complete list of Kramer cables is on our Web site at http://www.kramerelectronics.com

3 Overview

The **VS-41DVI-R** is a technologically advanced, high quality 4x1 Switcher for DVI-D signals supporting the DDWG DVI 1.0 standard.

With a bandwidth of 1.65GHz, the **VS-41DVI-R** can switch signals having resolutions up to UXGA, including all HDTV formats. Since high-resolution DVI signals are very sensitive to cable quality and to PCB layout, the **VS-41DVI-R** uses a carefully designed PCB, which includes all buffering, conditioning and amplifying circuitry to provide a re-clocked top-notch output signal.

In addition the **VS-41DVI-R**:

- Includes a built-in reclocking block that re-generates the DVI signal, so that several units may be cascaded
- Can read and store, in non-volatile memory, the EDID[1] block of the display device. It can then provide the EDID information to all of the DVI sources even if the display device is not connected
- Does not support HDCP (High Definition Digital Content Protection)
- Has five DVI-I connectors to make it compatible with all types of DVI cables
- Fits in one vertical space of a standard 19" professional rack enclosure

Achieving the best performance means:

- Connecting only good quality connection cables, thus avoiding interference, deterioration in signal quality due to poor matching, and elevated noise levels (often associated with low quality cables)
- Avoiding interference from neighboring electrical appliances and positioning your **VS-41DVI-R** away from moisture, excessive sunlight and dust

Figure 1 illustrates the front and rear panels of the **VS-41DVI-R**. Table 1 and Table 2 define the front and rear panels of the **VS-41DVI-R**, respectively.

1 EDID is Extended Display Identification Data

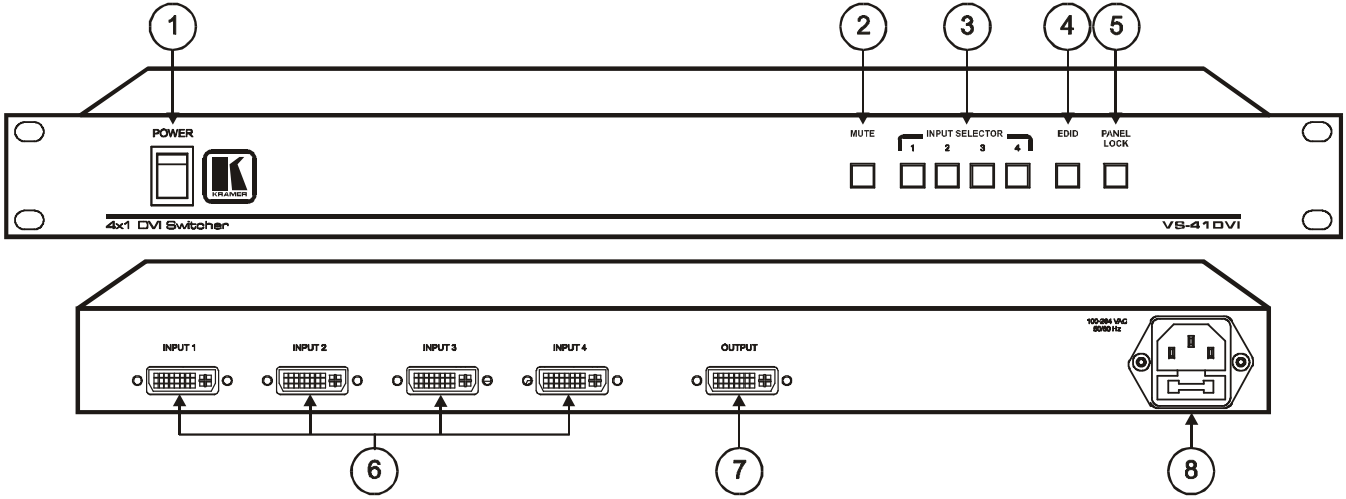

Figure 1: VS-41DVI-R 4x1 DVI Switcher

Table 1: VS-41DVI-R 4x1 DVI Switcher Front Panel Features

#	Feature	Function
1	*POWER* Switch	Illuminated switch for turning the unit ON or OFF
2	*MUTE* Button	Press to turn output off
3	*INPUT SELECTOR* Buttons	Press the INPUT button (1 to 4) to select input
4	*EDID Button*	Press the EDID button to acquire EDID information from display
5	*PANEL LOCK Button*	Press to disengage front panel buttons

Table 2: VS-41DVI-R 4x1 DVI Switcher Rear Panel Features

#	Feature	Function
6	*INPUT 1* through *INPUT 4* DVI Connectors	Connect to the DVI sources
7	*OUTPUT* DVI Connector	Connect to the DVI acceptor
8	Power Connector with Fuse	AC connector enabling power supply to the unit

4 Using a VS-41DVI-R 4x1 DVI Switcher

To use the **VS-41DVI-R** *4x1 DVI Switcher* (as in Figure 2), do the following[1]:

1. Connect up to 4 DVI sources to the INPUT connectors, as follows:
   - INPUT 1 connector to DVI source 1 (for example, a computer)
   - INPUT 2 connector to DVI source 2 (for example, a computer)
   - INPUT 3 connector to DVI source 3 (for example, a computer)
   - INPUT 4 connector to DVI source 4 (for example, a computer)
2. Connect the OUTPUT connector to the DVI acceptor (for example, a monitor).
3. Connect the power connector to the mains electricity.
4. Turn ON the power.
5. Press an INPUT SELECTOR button (1 to 4) to choose which DVI input to route to the output[2].
6. Press the EDID button to acquire the EDID information (see section 4.1).
7. Press the PANEL LOCK button if you want to disengage the front panel buttons.

1 Switch OFF the power on each device before connecting it to your VS-41DVI-R. After connecting your VS-41DVI-R, switch on its power and then switch on the power on each device

2 If the input is connected and active, the respective input button illuminates. If a source is not connected, the input button flashes

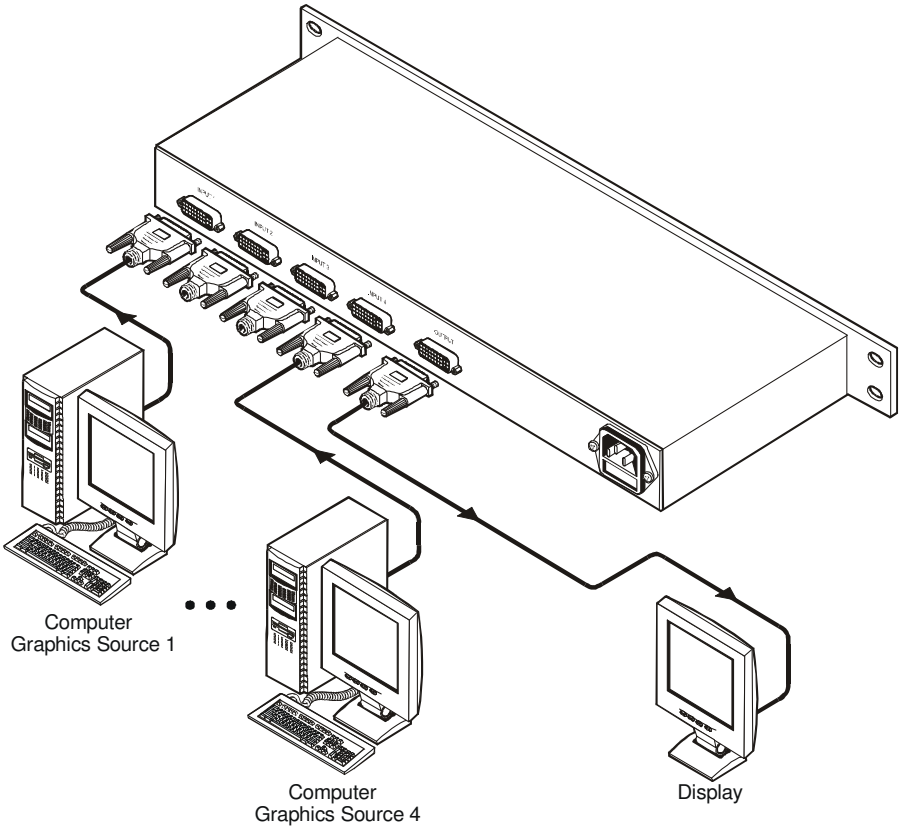

Figure 2: Connecting a VS-41DVI-R 4x1 DVI Switcher

4.1 Using the VS-41DVI-R EDID Button

The EDID button enables you to acquire the output EDID information.

When powering the **VS-41DVI-R**, the EDID button flashes if the machine detects an EDID different to the one stored in the machine's non-volatile memory. Otherwise the EDID button does not flash and is not illuminated.

4.1.1 Changing the EDID

To acquire the EDID of a new output display:

1. Connect the new output display.
2. Turn ON the power.
   The EDID button flashes.
3. Press the EDID button.
   The EDID button is illuminated while the **VS-41DVI-R** reads the EDID.
   The EDID is stored in the non-volatile memory when the EDID button no longer illuminates.

4.1.2 Restoring the Default EDID

To restore the default EDID, do the following:

1. Disconnect the output.
2. Turn OFF the power.
3. Turn ON the Power.
   The EDID button flashes.
4. Press the EDID button.
   The EDID button illuminates.
   The default EDID is stored in the non-volatile memory when the EDID button no longer illuminates.

5 Technical Specifications

Table 3 includes the technical specifications:

Table 3: Technical Specifications[1] of the VS-41DVI-R

INPUTS:	4 DVI[2], 1.2Vpp on a DVI Molex 24pin female connector; DDC signal 5Vpp (TTL)
OUTPUT:	1 DVI[2], 1.2Vpp on DVI Molex 24pin female connectors; DDC signal 5Vpp (TTL)
BANDWIDTH (-3dB):	1.65GHz
POWER SOURCE:	100 – 264VAC; 50/60Hz
DIMENSIONS:	19-inch (W), 7-inch (D), 1U (H)
WEIGHT:	2.5 kg. (5.5 lbs.) approx.
ACCESSORIES:	Power Cord

1 Specifications are subject to change without notice

2 On a DVI-I connector. Note that only the digital signal (DVI-D) is available on the DVI connector

LIMITED WARRANTY

Kramer Electronics (hereafter *Kramer*) warrants this product free from defects in material and workmanship under the following terms.

HOW LONG IS THE WARRANTY

Labor and parts are warranted for three years from the date of the first customer purchase.

WHO IS PROTECTED?

Only the first purchase customer may enforce this warranty.

WHAT IS COVERED AND WHAT IS NOT COVERED

Except as below, this warranty covers all defects in material or workmanship in this product. The following are not covered by the warranty:

1. Any product which is not distributed by Kramer, or which is not purchased from an authorized Kramer dealer. If you are uncertain as to whether a dealer is authorized, please contact Kramer at one of the agents listed in the Web site www.kramerelectronics.com.
2. Any product, on which the serial number has been defaced, modified or removed.
3. Damage, deterioration or malfunction resulting from:
   - i) Accident, misuse, abuse, neglect, fire, water, lightning or other acts of nature
   - ii) Product modification, or failure to follow instructions supplied with the product
   - iii) Repair or attempted repair by anyone not authorized by Kramer
   - iv) Any shipment of the product (claims must be presented to the carrier)
   - v) Removal or installation of the product
   - vi) Any other cause, which does not relate to a product defect
   - vii) Cartons, equipment enclosures, cables or accessories used in conjunction with the product

WHAT WE WILL PAY FOR AND WHAT WE WILL NOT PAY FOR

We will pay labor and material expenses for covered items. We will not pay for the following:

1. Removal or installations charges.
2. Costs of initial technical adjustments (set-up), including adjustment of user controls or programming. These costs are the responsibility of the Kramer dealer from whom the product was purchased.
3. Shipping charges.

HOW YOU CAN GET WARRANTY SERVICE

1. To obtain service on you product, you must take or ship it prepaid to any authorized Kramer service center.
2. Whenever warranty service is required, the original dated invoice (or a copy) must be presented as proof of warranty coverage, and should be included in any shipment of the product. Please also include in any mailing a contact name, company, address, and a description of the problem(s).
3. For the name of the nearest Kramer authorized service center, consult your authorized dealer.

LIMITATION OF IMPLIED WARRANTIES

All implied warranties, including warranties of merchantability and fitness for a particular purpose, are limited in duration to the length of this warranty.

EXCLUSION OF DAMAGES

The liability of Kramer for any effective products is limited to the repair or replacement of the product at our option. Kramer shall not be liable for:

1. Damage to other property caused by defects in this product, damages based upon inconvenience, loss of use of the product, loss of time, commercial loss; or:
2. Any other damages, whether incidental, consequential or otherwise. Some countries may not allow limitations on how long an implied warranty lasts and/or do not allow the exclusion or limitation of incidental or consequential damages, so the above limitations and exclusions may not apply to you.

This warranty gives you specific legal rights, and you may also have other rights, which vary from place to place.
NOTE: All products returned to Kramer for service must have prior approval. This may be obtained from your dealer.
This equipment has been tested to determine compliance with the requirements of:

EN-50081:	"Electromagnetic compatibility (EMC); generic emission standard. Part 1: Residential, commercial and light industry"
EN-50082:	"Electromagnetic compatibility (EMC) generic immunity standard. Part 1: Residential, commercial and light industry environment".
CFR-47:	FCC Rules and Regulations: Part 15: "Radio frequency devices Subpart B – Unintentional radiators"

CAUTION!

- Servicing the machines can only be done by an authorized Kramer technician. Any user who makes changes or modifications to the unit without the expressed approval of the manufacturer will void user authority to operate the equipment.
- Use the supplied DC power supply to feed power to the machine.
- Please use recommended interconnection cables to connect the machine to other components.

For the latest information on our products and a list of Kramer distributors, visit our Web site: www.kramerelectronics.com, where updates to this user manual may be found.
We welcome your questions, comments and feedback.

Kramer Electronics, Ltd.
Web site: www.kramerelectronics.com
E-mail: info@kramerel.com
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